

## REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Claim 31 is amended to adopt the helpful suggestion made by the Examiner at the top of page two of the Official Action. Accordingly, withdrawal of the objection to Claim 31 is respectfully requested.

Also, Claims 13 and 14 are amended without narrowing the claim scope to set forth the inadvertently omitted function associated with the claimed variable frequency signal generating means.

The claims currently pending in this application are Claims 13-32. Claims 13 and 14 are the only independent claims. Both of these independent claims define an on-vehicle radio device that acquires identification information to unlock the lock device of a vehicle from a portable radio device having such identification information recorded therein by radio communication with the portable radio device.

As set forth in independent Claim 13, the on-vehicle radio device comprises human detection means for detecting a person, variable frequency signal generating means for generating a variable frequency signal for the radio communication, band changing means for changing the frequency band of a signal generated by the variable frequency signal generating means according to the detection signal of the human detection means, radio transmitting means for transmitting the signal generated by the variable frequency signal generating means to outer space, and transmission characteristics changing means for changing the transmission characteristics of the radio transmitting means to transmission characteristics

adapted to the frequency band of the signal generated by the variable frequency signal generating means changed by the band changing means.

Claim 14 defines the on-vehicle radio device in a different manner. Here, the on-vehicle radio device includes radio wave measuring means that measures radio wave intensity in outer space of the on-vehicle radio device for each of predetermined frequency bands, variable frequency signal generating means that generates a variable frequency signal for the radio communication, and band changing means that changes the frequency band of the signal generated by the variable frequency signal generating means to one of the frequency bands for which the radio wave measuring means measures the lowest radio wave intensity. Radio transmitting means transmits the signal generated by the variable frequency signal generating means to the outer space, and transmission characteristics changing means changes the transmission characteristics of the radio transmitting means to transmission characteristics adapted to the frequency band of the signal generated by the variable frequency signal generating means changed by the band changing means.

The Official Action sets forth a rejection of independent Claims 13 and 14, and all of the dependent claims, based on the disclosure in U.S. Application Publication No. 2002/0025823 to *Hara* in view of the disclosure in U.S. Patent No. 7,102,487 to *Mafune et al.* That rejection is respectfully traversed.

*Hara* discloses a radio system that includes both a portable device and a stationary device, wherein the system is adapted to determine the position of the portable device. The portable device is carried by the user while the stationary device is wirelessly communicated with the portable device. The stationary device

sends first signals (portable-device finding signals) that are received by the portable device, whereupon the portable device sends second signals to the stationary device indicating the reception intensity data of the first signals. The first signals are sent by the stationary device from a plurality of stationary-device side antenna located at different positions. These side antenna also receive the second signals from the portable device, whereupon the stationary device determines the position of the portable device using the reception intensity data of the first signal included in the respective second signals.

Discussing the basis for the rejection, the Official Action seems to indicate that Figs. 1B and 2 of *Hara*, and the discussion in paragraphs [0059] and [0159] of *Hara* disclose band changing means that changes the frequency band. It is respectfully submitted that this is not the case.

Paragraph [0059] of *Hara* describes how the portable-device side communication means performs wireless communication using a communication frequency (e.g., a frequency within the UHF frequency band) different from the frequency used for power transmission (e.g., 100 kHz to 200 kHz). Thus, this portion of the disclosure in *Hara* does not describe changing the frequency band of the signal generated by a variable frequency signal generating means in accordance with a detection signal of a human detection means as recited in Claims 13 and 14. Instead, *Hara* merely describes using a frequency for wireless communication that is different from the frequency used for power transmission.

Paragraph [0159] of *Hara* mentions that the number of objects to be controlled by the disclosed radio system can be increased beyond just the vehicle door lock device and the vehicle engine control system. *Hara* also describes here that when

the lock device for the vehicle door and the engine start/stop control system are used as the controlled objects, it is possible to use a door knob operation sensor (which detects the operation of the door knob by the user) and a door knob sensor (which detects a state in which the user's hand approaches or touches the door). In such a case, the position determination process for the portable device is initiated in response to the signal output from any of such sensors. *Hara* further describes that the system detects when the portable device enters the cabin (i.e., when the user has entered the vehicle), whereupon the control mode is changed to the engine start/stop control mode, and the output power suitable for the intended mode is selected. Thus, the discussion in paragraph [0159] of *Hara* refers to change, but not a band changing means for changing the frequency band of a signal generated by a variable frequency signal generating means. Rather, the change described in this portion of the disclosure in *Hara* merely refers to changing the control mode from the lock device for the vehicle door to the engine start/stop control system. This is consistent with the description in paragraph [0062] of *Hara* which describes that the portable device changes the control mode from the door lock control mode to the engine start/stop control mode in response to an appropriate mode select signal from the stationary device.

As an aside, it is noted that *Hara* also describes a change in output power. For example, in paragraph [0082], *Hara* describes that the transmission output power of the portable device and the stationary device in the door lock control mode takes a relatively large initial value suitable for providing a relatively broad range with which remote control communication is possible. Later, in paragraph [0094], *Hara* describes what occurs when the portable device 10 enters the cabin. Here, a wake-

up signal is sent to the portable device 10, and an output power is selected that is suitable for the engine start/stop control mode. Paragraph [0095] of *Hara* goes on to describe aspects of the transmission output power selecting operation.

These aspects of the *Hara* disclosure, while discussing a change in output power, disclose nothing about changing the frequency band of a signal generated by a variable frequency signal generating means as recited in the independent claims. Further, the change of output power discussed in *Hara* is carried out after communication is established between the portable device and a main device, and subsequent estimation of the position of the portable device. This change in output power is performed to reduce the output level at the time of communication for purposes of crime prevention or in order to avoid saturating the reception intensity data without fail.

As discussed in the present application by way of example, the band changing means changes the frequency band of the signal generated by the variable frequency signal generating means to help address difficulties which may arise before establishing communication between a portable device and a main device.

In light of at least the foregoing deficiency in the disclosure in *Hara*, it is respectfully submitted that the on-vehicle radio device at issue here is patentably distinguishable over a combination of the disclosures in *Hara* and *Mafune et al.*

Still further arguments exist for the patentability of the independent claims here. For example, the Official Action states that *Mafune* discloses a high pass filter that filters the frequency band according to detection of a signal. A careful reading of the discussion beginning in line 29 of column 7 of *Mafune et al.* reveals that this is not actually true. What *Mafune et al.* actually describes is a judging device 37 that

produces a detection output. That is, *Mafune et al.* describes that the judging device 37 switches on its output if the output V from a mixer 36 increases/decreases. The output from the judging device 37 provides a signal indicative of the presence or absence of an approaching target object such as a user's hand. The judging device 37 is clearly not a band changing means as recited in the independent claims. Consequently, combining the disclosures in *Hara* and *Mafune et al.* would not have resulted in an on-vehicle radio device similar to that recited in the independent claims. Accordingly, withdrawal of the rejection of record and allowance of this application are earnestly solicited.

The dependent claims define additional distinguishing features and aspects associated with the on-vehicle radio device at issue here. As these dependent claims are allowable at least by virtue of their dependence from allowable independent claims, a detailed discussion of the additional distinguishing features recited in the dependent claims is not set forth at this time.

As a final matter, the Examiner is respectfully requested to consider the information contained in the accompanying Information Disclosure Statement.

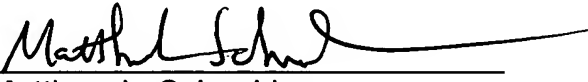
Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful

in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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